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August 9, 2019

Mr. Ravi Sanga
EPA Remedial Project Manager
U.S. EPA Region 10
1200 Sixth Avenue, ECL 111
Seattle, WA 98101

RE: Farm Ponds Area Groundwater Remedial Action Progress Summary – Year 2018 Revised – Response to EPA and DEQ Comments

Dear Mr. Sanga:

This letter and the attached revised report are in response to the U.S. Environmental Protection (EPA) comments, sent April 5, 2019, and the Oregon Department of Environmental Quality (DEQ) comments, sent July 11, 2019, regarding the Farm Ponds Area Groundwater Remedial Action Progress Summary – Year 2018.

EPA Comment #1:

Page 3, Paragraph 1, in referring to well PW-104S located near the former well SS, states: "...ATI installed three permanent downgradient monitoring wells in 2015: PW-105S to the southeast, PW-106S to the south, and PW-107S to the southwest." Based on the well locations shown on Figure 2, wells PW-105S and PW-107S are located southwest and southeast of well PW-104, respectively. This inconsistency needs to be corrected throughout the document. Showing the location of abandoned wells SS and SD on the figure would also help visualize the placement of new well in relation to them and will help with review of historical data.

Response to EPA Comment #1:

The cardinal directions have been corrected for PW-105S and PW-107S. Locations of wells SS and SD have been added to Figure 1 for reference.

EPA Comment #2:

Figure 2 needs to be retitled to clearly indicate it is showing the groundwater contours for the Willamette Silt Unit.

Response to EPA Comment #2:

Figure 2 has been updated.

EPA Comment #3:

Based on a review of well screen elevations for the seven wells from which groundwater samples were collected for analysis, it appears that five of the well screens have been completed in the lower part of the Willamette Silt. The well screen for Well PW-40s appears to straddle the upper and lower Silt, and the well screen for well PW-108A is completed in the Linn Gravel. Considering that the groundwater flow rates and contaminant transport characteristics will vary between the Upper Willamette Silt, Lower Willamette Silt and the Linn Gravel, provide a complete and representative analysis of groundwater elevations, flow directions, contaminant transport and seasonal variability in the area surrounding PW-104S to support the assessment that nearby wells are properly placed and that the data generated from these wells can support the evaluation of the presence/absence of a contaminant plume.

Response to EPA Comment #3:

ATI developed a new figure (Figure 2B) and added discussion of hydrogeology near PW-104S in Section 5 to further support the assessment that CVOCs are localized and not migrating in groundwater.

EPA Comment #4:

Section 3, last paragraph refers to PW-60S. This must be corrected to refer to PW-65S.

Response to EPA Comment #4:

Corrected.

EPA Comment #5:

Section 5, Paragraph 2 states: "Analytical results from 2016 to 2017 in PW-105S, PW-106S, and PW-107S give no indication that CVOCs detected near PW-104S are migrating." Support this interpretation of results (two monitoring events) with a discussion of groundwater elevations, flow directions, well screen placements, contaminant transport characteristics, and seasonal variability in the area surrounding PW-104S to support the delisting request.

Response to EPA Comment #5:

Refer to added discussion of hydrogeology near PW-104S in Section 5 to further support the assessment that CVOCs are localized and not migrating in groundwater.

EPA Comment #6:

Section 5, Paragraph 2 refers to 33 monitoring wells being sampled during the 2016 monitoring event, but the 2016 report presents only 32 wells. This inconsistency needs to be corrected.

Response to EPA Comment #6:

Corrected.

EPA Comment #7:

Section 5, paragraph 4. "…ATI is developing a completion plan consistent with EPA guidance to certify that the remedial action in the Farm Ponds Area has met the Remedial Action Objectives and Cleanup Levels stipulated in the ROD in support of a partial delisting of the Farm Ponds Area". Refer to the following EPA documents to develop an approach establishing that a well has met cleanup levels.

Response to EPA Comment #7:

ATI looks forward to working with EPA to develop an approach to support partial delisting of the Farm Ponds. We plan to develop this approach based on meetings with EPA, and future document submittals. As such, ATI is not including an approach to support partial delisting in this Annual Report.

DEQ Comment #1:

In the Farm Ponds Report, Page 5, there is the conclusion that "there was a downward or stable trend for all detected CVOCs. However, the report only presents three data points to support these statements on trend. If there is not a statistically valid trend, these statements should be revised. The data, with the graphical representation, could stand alone without the trend statements.

Response to DEQ Comment #1:

Statement in the Conclusion section has been adjusted.

If you have any questions, please feel free to contact me at 541.812.7376.

Sincerely,

Noel Mak

NPL Program Coordinator

Enclosures: 1. *Farm Ponds Area Groundwater Remedial Action Progress Summary – Year 2018 – Revised*

Technical Memorandum

To: Noel Mak/ATI Millersburg Operations

From: Renee Fowler/GSI Water Solutions, Inc.
Matt Kohlbecker/ GSI Water Solutions, Inc.
Kathy Roush/GSI Water Solutions, Inc.

Date: August 9, 2019

Re: **Farm Ponds Area Groundwater Remedial Action Progress Summary – Year 2018 – Revised**

This technical memorandum (TM) documents the results of groundwater monitoring conducted for the 2018 monitoring event in the Farm Ponds Area at the ATI Millersburg Operations (Oregon) facility (ATI), formerly ATI Wah Chang (see Figure 1). Groundwater monitoring data before 2018 are included in an attachment to this TM to assess historical concentration trends.

This revised TM addresses the U.S. Environmental Protection Agency (EPA) comments from April 5, 2019 to the report submitted on March 29, 2018 (GSI, 2019).

1. Background

Previous groundwater monitoring results from the Farm Ponds Area are summarized in the following documents:

- *Farm Ponds Groundwater – 1999 Data Summary* (CH2M HILL, January 2000)
- *Wah Chang Farm Ponds March and June 2000 Groundwater Monitoring Results* (CH2M HILL, September 2000)
- *Farm Ponds - Confirmation Sampling Report* (CH2M HILL, October 2000)
- *Farm Ponds Groundwater Year 2000 Data Summary* (CH2M HILL, January 2001)
- *Farm Ponds Groundwater Year 2001 Data Summary* (CH2M HILL, February 2002)
- *Three-Year Evaluation Report for Farm Ponds Groundwater* (CH2M HILL, May 2003)
- *Wah Chang Farm Ponds Groundwater – Year 2003 to 2006 Data Summary* (CH2M HILL, June 2007)
- *Wah Chang Farm Ponds Area Groundwater Data Summary – Years 2007 and 2008* (GSI Water Solutions, February 2009)

- *Wah Chang Farm Ponds Area Groundwater Data Summary – Year 2009* (GSI Water Solutions, February 2010)
- *Wah Chang Farm Ponds Area Groundwater Data Summary – Year 2010* (GSI Water Solutions, February 2011)
- *Wah Chang Farm Ponds Area Groundwater Data Summary – Year 2011* (GSI Water Solutions, February 2012)
- *Wah Chang Farm Ponds Area Groundwater Data Summary – Year 2012* (GSI Water Solutions, September 2013)
- *Wah Chang Farm Ponds Area Groundwater Data Summary – Year 2013* (GSI Water Solutions, October 2014)
- *Wah Chang Farm Ponds Area Groundwater Data Summary – Year 2014* (GSI Water Solutions, March 2015)
- *Sitewide Groundwater and Surface Water Sampling Results – 2016* (GSI Water Solutions, March 2017)
- *Farm Ponds Area Groundwater Data Summary – Year 2017* (GSI Water Solutions, March 2018)

These documents provide detailed characterization information about site hydrogeology and groundwater flow direction that is not repeated in this TM.

2. Farm Ponds Area

The Farm Ponds Area is described in the *Record of Decision for the Groundwater and Sediments Operable Unit for ATI Wah Chang Albany* (ROD; EPA, 1994) as follows:

> "The Farm Ponds Area is located approximately 3/4-mile north of the main plant, and contains four 2-1/2-acre solids storage ponds (Figure 6-5). These ponds receive lime solids waste generated in TWCA's (Teledyne Wah Chang Albany) industrial wastewater treatment plant. The ponds are constructed with a soil-bentonite liner. The ponds have been operational since 1979, and are regulated under the National Pollutant Discharge Elimination System (NPDES) program."

Chlorinated volatile organic compounds (CVOCs) were detected in groundwater samples collected from Farm Ponds Area monitoring wells during groundwater and soil remedial investigations (CH2M HILL, 1990). In 1991, the EPA and Oregon Department of Environmental Quality (DEQ) authorized closure of the ponds. Placement of sludge materials in the ponds ceased in 1993. Between late 1994 and October 1999, sludge material stored in the ponds was removed and transported to a solid waste landfill. In August 2001, the pond dikes were leveled and the area was regraded and restored to its current topography.

EPA authorized annual groundwater sampling beginning in 2003; before then, monitoring in the Farm Ponds Area was generally conducted on a semiannual basis. Well PW-40A was removed from the sampling program in 2010 with the approval of EPA (EPA, 2010a). The 2015 monitoring event was postponed because of negotiation and scheduling of the sitewide groundwater and surface water sampling event, which took place in the spring of 2016.

In August 2012, nine temporary wells were installed downgradient of well SS to assess the extent of CVOCs near the well. The 2012 performance summary (GSI, 2013) provides the details for these operations, analytical testing, and well placements. Based on the analytical results from the temporary well sampling, ATI installed three permanent downgradient monitoring wells in 2015: PW-105S to the southwest, PW-106S to the south, and PW-107S to the southeast. At the same time, PW-104S was installed near the former well SS, and PW-108A was located near and replaced well SD. Subsequent monitoring indicates that CVOCs near well SS and PW-104S are highly localized, and are not migrating. For more details, refer to the *Farm Ponds Phase 2 Work Plan* (GSI, 2015a).

Historically, groundwater samples in the Farm Ponds Area were collected in the summer when the ground is drier and wells could be approached with a sampling vehicle. Unfortunately, many of the wells are dry during that period and cannot be sampled. Beginning in 2016, the annual monitoring event has taken place during the spring, as are monitoring events in other areas of the site (e.g., Fabrication Area and Extraction Area). The 2018 sampling event occurred in May 2018.

3. Groundwater Monitoring

The Farm Ponds Area consists of 32 monitoring wells (Figure 1). Monitoring wells with an 'A' designation are completed in the Linn Gravel hydrostratigraphic unit, which is considered the uppermost water-bearing unit. Monitoring wells designated with an 'S' are completed in the Willamette Silt hydrostratigraphic unit. This silt is the fine-grained material that mantles much of the mid-Willamette Valley. The silt is seasonally saturated in most areas and yields low quantities of groundwater to wells, typically less than one gallon per minute. Well construction details are in Attachment A.

The annual groundwater monitoring event includes water level measurements at 19 monitoring wells and analytical groundwater samples at 7 monitoring wells. Table 1 presents the type of monitoring at each well.

Groundwater Elevations

Table 2 presents the groundwater levels measured in May 2018 and calculated groundwater elevations recorded in monitoring wells completed in both Willamette Silt and Linn Gravel as part of the annual monitoring program. An additional comprehensive water level monitoring event occurred in September 2018 that included 31 monitoring wells in the Farm Ponds Area to assist in updating the conceptual site model; results are presented in Table 2.

Groundwater flow direction in the Willamette Silt was generally to the southwest during the 2018 monitoring event, as shown in Figure 2.

Groundwater Field Parameters

Field parameters were recorded after parameter stabilization and before collecting analytical groundwater samples at each monitoring well. A YSI 556 multiparameter instrument connected to a closed flow-through cell was used to measure field parameters during purging of the wells.

The instrument was calibrated daily using fresh calibration standards recommended by the instrument manufacturer. Table 3 presents the stable field measurements recorded before collecting groundwater samples in the monitoring wells.

Quality Control Program

Groundwater monitoring in 2018 was completed in conformance with the quality assurance project plan (QAPP; GSI, 2015b). All samples were immediately placed in iced coolers and maintained under chain-of-custody protocols. ATI or GSI Water Solutions, Inc. (GSI), personnel delivered samples to the laboratory (Apex Laboratory in Tigard, Oregon) during collection periods.

Duplicate samples for field quality control (QC) were collected at a frequency of 5 percent of the samples collected during the event. All duplicate samples were collected at the same time as the parent sample, and were blind-labeled and delivered to Apex with the normal shipment. Matrix spike and matrix spike duplicate samples were also collected at a frequency of 5 percent and when potential changes in the sample matrix were anticipated because of previous sampling results. Apex provided the use of approved analytical methods according to the QAPP, analytical data package deliverables, and conformance with the laboratory's quality assurance (QA) manual.

Field and laboratory data were subjected to a formal verification and validation process in accordance with EPA guidance documents, as described in the QAPP. An external party, as defined in EPA's *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use* (EPA, 2009), QA/QC Solutions, LLC, performed the data validation to determine the usability of the data for meeting project objectives. An abbreviated validation review (i.e., a summary review of the results reported) was performed on 90 percent of the data and a more comprehensive validation review was performed on 10 percent of the data, as described in Section D.1 of the QAPP.

Data qualifiers were assigned during data validation to the electronic data deliverables (EDDs) when applicable QA and QC limits were not met and the qualification was warranted following guidance specified by EPA (EPA, 2002, 2008, and 2010b), QC requirements specified in the QAPP, and method-specific QC requirements, as applicable. Final, qualified (as necessary) laboratory results were transmitted in EDDs for data management, further evaluation, and reporting.

After verification and validation of the field and laboratory data, as described above, data completeness was calculated by comparing the total number of acceptable data (non-rejected data) to the total number of data points generated. Overall, completeness for the 2018 sampling event was 100 percent (i.e., no data were rejected).

Groundwater Analytical Sampling

Groundwater samples were analyzed for CVOCs (see Table 4). Attachment B presents historical groundwater analytical results for samples collected from 2000 to 2018.

During the 2018 monitoring event, there were no detections above the CVOC cleanup standards in any monitoring well with the exception of PW-104S, which replaced well SS. Time-trend plots are presented, as requested by EPA, for the constituents of concern (COCs): tetrachloroethene (PCE) (Figure 3); trichloroethene (TCE) (Figure 4); 1,1,2-trichloroethane (1,1,2-TCA) (Figure 5); and 1,2-dichloroethane (1,2-DCA) (Figure 6).

The PW-104S concentration of PCE (3.01 micrograms per liter [µg/L]) remained below the cleanup standard of 5 µg/L and continued the downward trend established in 2017 (Figure 3). Figure 4 shows the downward trend of TCE in PW-104S (7.60 µg/L), although the concentration exceeded the cleanup standard of 5 µg/L. The concentrations of 1,1,2-TCA (8.96 µg/L) and 1,2-DCA (6.74 µg/L) at PW-104S exceeded the applicable cleanup standards (3 µg/L, and 5 µg/L, respectively) and remained relatively stable from 2017 (Figures 5 and 6, respectively).

Although there are low-level cleanup standard exceedances at PW-104S, the three southern downgradient monitoring wells (PW-105S, PW-106S, and PW-107S) did not have a single CVOC compound detected. PW-40S and PW-65S are downgradient of PW-104S to the west and have not had a CVOC exceedance since 2008 (Attachment B).

4. Conclusions

Based on the 2018 groundwater monitoring event results and remedial actions in the Farm Ponds Area, the following observations were made:

- In 2018, CVOCs were either not detected or detected below the cleanup standards in all monitoring wells with the exception of PW-104S.
- CVOC concentrations in the vicinity of PW-104S appear to be highly localized and are not migrating in groundwater (i.e., no CVOCs were detected in downgradient wells PW-105S, PW-106S and PW-107S).
- In PW-104S, there were three detected CVOCs (Figures 3 through 6):
    - TCE was detected at 7.6 µg/L in 2018, which is less the detections in 2017 (10.9 µg/L) and 2016 (19 µg/L).
    - 1,1,2-TCA was detected at 8.96 µg/L in 2018, which is similar to the 8.76 µg/L detection in 2017.
    - 1,1-DCA was detected at 6.74 µg/L in 2018, which is relatively stable from the 2017 and 2016 concentrations (5.86 µg/L and 6.09 µg/L, respectively).
- The groundwater flow direction in the Willamette Silt (including PW-104S) is generally to the southwest. PW-40S and PW-65S, which are downgradient of PW-104S to the west, have not had any CVOC detections exceed a cleanup standard since 2008. PW-105S, PW-106S, and PW-107S, which are downgradient of PW-104S to the southwest, south, and southeast, respectively, have recorded no CVOC detections above the laboratory reporting limit since installation in 2016.

- PW-108A, installed in Linn Gravel in 2015 to replace well SD, has recorded no CVOC detections since installation in 2016, indicating that CVOCs near PW-104S are restricted to the Willamette Silt.
- Since 2008, there have been no exceedances of cleanup standards for any analytical compound in the perimeter wells along the property boundary that are the points of compliance for the Farm Ponds: PW-40S, PW-65S, PW-105S, PW-106S, and PW-107S.

5. Discussion

The highest CVOC concentrations in Farm Ponds groundwater occur in the Willamette Silt at PW-104S. As shown in Table 4, this is the only area of the Farm Ponds where CVOCs exceed cleanup standards. Willamette Silt monitoring wells PW-40S and PW-65S, which lie to the west of PW-104S, have not had an exceedance of a CVOC cleanup standard since 2008.

PW-104S, along with monitoring wells PW-105S, PW-106S, PW-107S, and PW-108S, were installed in 2015, with the objective of understanding the nature and extent of CVOCs in groundwater in this area. PW-104S through PW-107S are completed in the Willamette Silt, and PW-108S is completed in the Linn Gravel. CVOCs are not detected in Linn Gravel monitoring well PW-108S, indicating that CVOCs are restricted to the Willamette Silt.

In the Farm Ponds Area, the Willamette Silt is subdivided into the upper Willamette Silt (a brown silt characterized by numerous sand lenses) and the lower Willamette Silt (a gray silt that does not contain sand lenses). Near PW-104S, the upper and lower Willamette Silt appear to be similar from a contaminant transport perspective, as neither unit contains sand lenses[1]. PW-104S and PW-107S[2] monitor groundwater in both the upper and lower Willamette Silt, and PW-105S and PW-106S monitor groundwater in the lower Willamette Silt.

As shown in Table 4, CVOCs have not been detected in monitoring wells PW-105S, PW-106S, and PW-107S, which were located downgradient of PW-104S using an observational approach. Specifically, in 2012, nine temporary direct-push borings were advanced south of PW-104S, and groundwater samples were collected from each boring and analyzed for CVOCs. As shown in Figure 2B, the temporary borings indicated that CVOCs had migrated due south from PW-104S (i.e., the highest concentrations of CVOCs were generally observed in TW-4, TW-5, and TW-6). Groundwater elevation contours from PW-104S through PW-107S are shown in Figure 2B, and exhibit a seasonal variation from southwest to south groundwater flow in this area. However, the predominant direction of groundwater flow appears to be south, based on the southerly CVOC migration.

The fact that CVOCs are detected only in PW-104S (and not in downgradient wells PW-105S, PW-106S, and PW-107S) indicates that the CVOCs detected in the Willamette Silt at PW-104S are not migrating. This may be related to the fact that the Willamette Silt in this area does not contain sand lenses, which are potentially pathways for CVOC migration because of their

[1] No sand lenses are noted in the boring logs for PW-104S, PW-105S, PW-106S and PW-107S. Compare this to the boring log for PW-40S, where several sand lenses are noted.

[2] Monitoring well PW-104S is screened across the upper and lower Willamette Silt, and the filter pack for monitoring well PW-107S straddles the upper and lower Willamette Silt.

higher permeability. The absence of sand lenses may also explain why CVOC detections appear to be more persistent in the Willamette Silt at PW-104S, relative to the rest of the Farm Ponds site where CVOC concentrations have declined to below cleanup standards.

PW-104S lies on the southern boundary of the old removed Farm Ponds (see Figure 1). The ATI property boundary lies approximately 300 feet to the south of PW-104S and 1,100 feet to the west of PW-104S. The Explanation of Significance Difference (ESD) for the ROD, issued by EPA on October 8, 1996, addressed the need for clarification in the requirements for the Farm Ponds Area in Section 4.2. It begins by stating, "*The ROD provides apparently inconsistent requirements for groundwater in the Farm Ponds.*" It clarifies this inconsistency by stating that, "*For consistency with the rest of the site, EPA has changed the point of compliance to the property boundaries in the Farm Ponds Area.*" The property boundary is shown in Figure 1.

Accordingly, ATI is developing a completion plan consistent with EPA guidance to certify that the remedial action in the Farm Ponds Area has met the remedial action objectives and cleanup standards stipulated in the ROD in support of a partial delisting of the Farm Ponds Area. A petition letter was sent on December 10, 2018, to notify EPA of ATI's intention of partial delisting of the Farm Ponds Area and met with EPA on July 15, 2019, to discuss the path forward.

6. References

CH2M HILL. 1990. Remedial Investigation/Feasibility Study for Teledyne Wah Chang, Albany, Oregon. December 1, 1990.

EPA. 1994. Record of Decision for the Groundwater and Sediments Operable Unit for ATI Wah Chang Albany. U.S. Environmental Protection Agency. June 1994.

EPA. 2002. Guidance on Environmental Data Verification and Validation. EPA QA/G-8. EPA/240/R-02/004. November 2002.

EPA. 2008. USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review. EPA-540/R-08/01. June 2008.

EPA. 2009. Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use. EPA 540-R-08-005. U.S. Environmental Protection Agency (EPA). January 2009.

EPA. 2010a. EPA Comments – Wah Chang Farm Ponds Area Groundwater Data Summary, Teledyne/Wah Chang Superfund Site, Albany, Oregon. U.S. Environmental Protection Agency. June 4, 2010.

EPA. 2010b. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review. EPA-540/R-10/011. January 2010.

GSI. 2013. Wah Chang Farm Ponds Area Groundwater Data Summary – Year 2012. Prepared by GSI Water Solutions, Inc. February 2013.

GSI. 2015a. Farm Ponds Phase 2 Work Plan. Prepared by GSI Water Solutions, Inc. April 2015.

GSI. 2015b. Quality Assurance Project Plan for Site-Wide Remedial Actions. Prepared by GSI Water Solutions, Inc. December 2015.

GSI. 2018. Sitewide Groundwater and Surface Water Sampling Results – 2016, Revised. Prepared by GSI Water Solutions, Inc. March 2018.

GSI. 2019. Farm Ponds Area Groundwater Remedial Action Progress Summary – Year 2018. Prepared by GSI Water Solutions, Inc. March 2018.

Table 1. Farm Ponds Area Monitoring Activities in 2018
ATI Millersburg Operations, Oregon

Well	Hydrostratigraphic Unit	Groundwater Levels	Groundwater Sampling
PW-40A	Linn Gravel	X	
PW-40S	Willamette Silt	X	X
PW-43A	Linn Gravel	X	
PW-44A	Linn Gravel	X	
PW-64A	Linn Gravel	X	
PW-64S	Willamette Silt	X	
PW-65A	Linn Gravel	X	
PW-65S	Willamette Silt	X	X
PW-66A	Linn Gravel	X	
PW-66S	Willamette Silt	X	
PW-67A	Linn Gravel	X	
PW-67S	Willamette Silt	X	
PW-104S	Willamette Silt	X	X
PW-105S	Willamette Silt	X	X
PW-106S	Willamette Silt	X	X
PW-107S	Willamette Silt	X	X
PW-108A	Linn Gravel	X	X
WD1	--	X	
WD2	--	X	

Notes:
PW designation indicates monitoring well.
Construction of WD1 and WD2 is unlikely to meet Oregon Water Resources well construction regulations. Water levels are not used for groundwater contouring.

Table 2. Farm Ponds Area Wells Groundwater Elevation in 2018

ATI Millersburg Operations, Oregon

		Annual Event			Comprehensive Water Level Event		
Well	**TOC Elev** (ft amsl)	**Date**	**DTW** (ft bgs)	**GW Elev** (ft amsl)	**Date**	**DTW** (ft bgs)	**GW Elev** (ft amsl)
ND	232.85	--	--	--	9/24/2018	13.00	219.85
ND-1	216.86	--	--	--	9/24/2018	7.47	209.39
ND-2	217.34	--	--	--	9/24/2018	7.91	209.43
NS	221.15	--	--	--	9/24/2018	11.70	209.45
PW-35A	234.99	--	--	--	9/24/2018	19.01	215.98
PW-36A	235.99	--	--	--	9/24/2018	11.43	224.56
PW-37A	227.32	--	--	--	9/24/2018	11.79	215.53
PW-38A	223.04	--	--	--	9/24/2018	7.75	215.29
PW-39A	238.70	--	--	--	9/24/2018	23.41	215.29
PW-40A	217.17	5/8/2018	9.51	207.66	9/24/2018	16.55	200.62
PW-40S	217.51	5/8/2018	5.20	212.31	9/24/2018	13.34	204.17
PW-43A	214.12	5/8/2018	7.96	206.16	9/24/2018	14.21	199.91
PW-43S	214.35	--	--	--	9/24/2018	11.43	202.92
PW-44A	214.40	5/8/2018	NM	NM	9/24/2018	14.47	199.93
PW-44S	214.44	--	--	--	9/24/2018	13.28	201.16
PW-64A	212.93	5/8/2018	5.07	207.86	9/24/2018	12.66	200.27
PW-64S	212.96	5/8/2018	3.39	209.57	9/24/2018	12.80	200.16
PW-65A	212.52	5/8/2018	7.49	205.03	9/24/2018	14.62	197.90
PW-65S	213.06	5/8/2018	3.61	209.45	9/24/2018	13.31	199.75
PW-66A	211.46	5/8/2018	7.74	203.72	9/24/2018	13.91	197.55
PW-66S	211.36	5/8/2018	4.85	206.51	9/24/2018	11.08	200.28
PW-67A	215.18	--	--	--	9/24/2018	15.85	199.33
PW-67S	212.71	5/8/2018	5.80	206.91	9/24/2018	12.55	200.16
PW-104S	222.76	5/8/2018	5.84	216.92	9/24/2018	13.17	209.59
PW-105S	218.52	5/8/2018	2.59	215.93	9/24/2018	11.65	206.87
PW-106S	219.55	5/8/2018	2.57	216.98	9/24/2018	12.35	207.20
PW-107S	220.65	5/8/2018	3.32	217.33	9/24/2018	11.98	208.67
PW-108A	223.58	5/8/2018	Artisan	Artisan	9/24/2018	7.97	215.61
WD1	220.45	5/8/2018	11.89	208.56	9/24/2018	18.61	201.84
WD2	220.60	5/8/2018	11.95	208.65	9/24/2018	18.71	201.89
WS	220.37	--	--	--	9/24/2018	15.89	204.48

Table 2. Farm Ponds Area Wells Groundwater Elevation in 2018
ATI Millersburg Operations, Oregon

Notes:

-- = not applicable; not included in the monitoring program
DTW = depth to water
ft amsl = feet above mean sea level
ft bgs = feet below ground surface
GW Elev = groundwater elevation
NM = not measured; not able to get lock open
TOC = top of casing
Several monitoring wells are seasonally artesian wells. Monitoring well PW-108A was artesian during the 2018 monitoring event.

Table 3. Farm Ponds Area Groundwater Field Parameters in 2018

ATI Millersburg Operations, Oregon

Well	Temperature (˚C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (unit)	Oxidation-Reduction Potential (mV)
Cleanup Standard	--	--	--	*6.5 - 8.5* [1]	--
PW-40S	13.8	2,180	0.41	6.51	35.0
PW-65S	11.8	1,592	2.03	6.95	68.8
PW-104S	13.7	2,454	1.30	6.29	65.7
PW-105S	12.1	341	3.40	6.66	119.6
PW-106S	11.7	272	2.30	6.72	121.3
PW-107S	11.5	263	3.90	6.14	137.2
PW-108A	13.8	306	0.09	7.05	-61.7

Notes:

[1] The cleanup standard is the U.S. Environmental Protection Agency drinking water secondary maximum contaminant level (SMCL).

°C = degree Celsius

µS/cm = micro Siemen per centimeter

mg/L = milligram per liter

mV = millivolt

NS = not sampled due to insufficient volume

Table 4. Farm Ponds Area Analytical Results in 2018

ATI Millersburg Operations, Oregon

Well	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	1,1,1-TCA (µg/L)	1,1,2,2-PCA (µg/L)	1,1,2-TCA (µg/L)	1,1-DCA (µg/L)	1,2-DCA (µg/L)
Cleanup Standard	*5*	*5*	*70*	*7*	*2*	*200*	*0.175*	*3*	*810*	*5*
PW-40S	0.4 U	0.483	9.06	0.4 U	0.472	0.4 U	0.5 U	0.5 U	5.87	0.453
PW-65S	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.5 U	0.5 U	2.52	0.635
PW-104S	**3.01**	**7.60**	37.9	0.915	0.4 U	0.4 U	0.5 U	**8.96**	11.9	**6.74**
PW-105S	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.5 U	0.5 U	0.4 U	0.4 U
PW-106S	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.5 U	0.5 U	0.4 U	0.4 U
PW-107S	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.5 U	0.5 U	0.4 U	0.4 U
PW-108A	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.5 U	0.5 U	0.4 U	0.4 U

NOTES:

µg/L = microgram per liter

DCA = dichloroethane

DCE = dichloroethene

PCA = tetrachloroethane

PCE = tetrachloroethene

TCA = trichloroethane

TCE = trichloroethene

VC = vinyl chloride

U = analyte not detected above method reporting limit

Bold indicates detected concentration meets or exceeds the cleanup standard.

FIGURE 1

Farm Ponds Area Monitoring Wells

ATI Millersburg Operations, Oregon

LEGEND

- Monitoring Well
- Monitoring Well (abandoned)
- Property Boundary
- Railroad

N

0 125 250 375

Feet

Date: April 22, 2019

Data Sources: Wah Chang, City of Albany GIS

GSI Water Solutions, Inc.

Document Path: Y:\0168_Wah_Chang\Source_Figures\028_2019\Annual_Report\Farm_Ponds_Area\Figure1_Farm_Ponds_Area_MWs.mxd

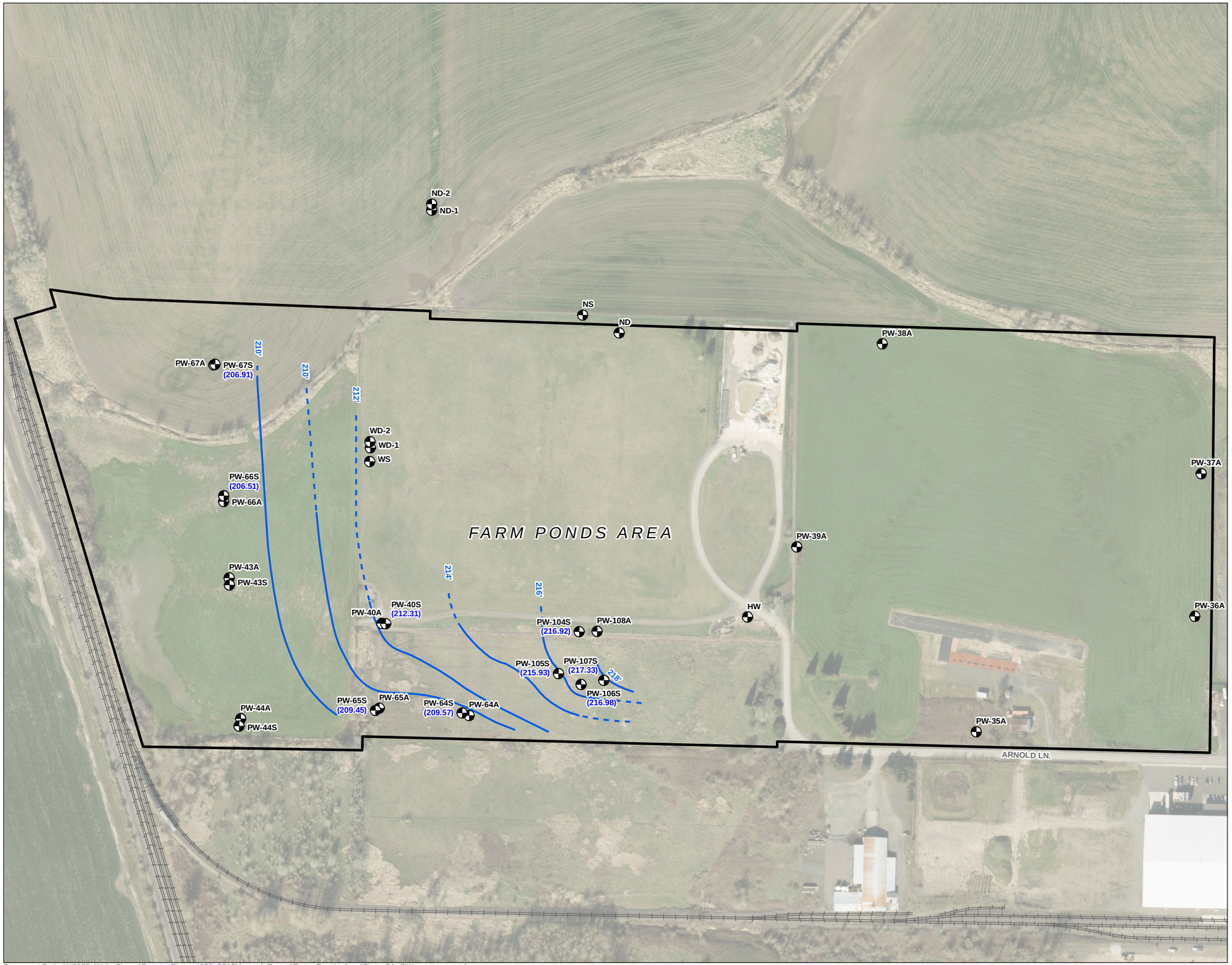


FIGURE 2A

Willamette Silt Groundwater Contours 2018 Monitoring Event

ATI Millersburg Operations, Oregon

LEGEND

- Monitoring Well
- Groundwater Contour (dashed where inferred)
- Property Boundary
- Railroad

NOTES:

1. Wells screened in Willamette Silt used for water level contouring.
2. All water levels collected on May 8, 2018.

N

0 125 250 375

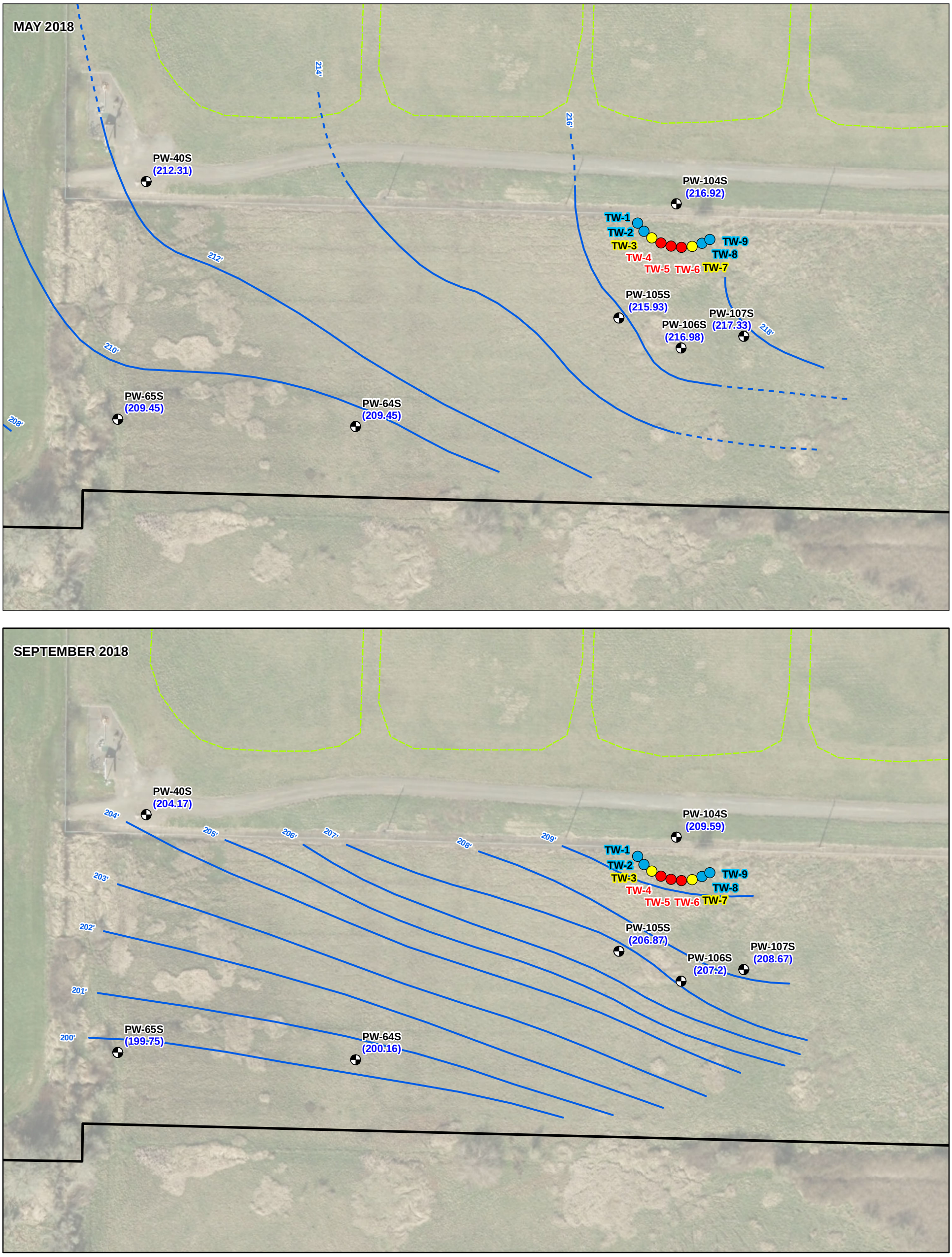
Feet

Date: April 22, 2019

Data Sources: Wah Chang, City of Albany GIS

GSI Water Solutions, Inc.

Document Path: Y:\0168_Wah_Chang\Source_Figures\028_2019\Annual_Report\Farm_Ponds_Area\Figure2A_GW_contours.mxd



LEGEND

Temporary Direct-Push Boring (2012)

- 1,2 - DCA < 1 ug/L
- 1,2 - DCA 1-10 ug/L
- 1,2 - DCA 10-15 ug/L

Monitoring Well

- Willamette Silt
- Groundwater Contour (dashed where inferred)

All Other Features

- Approximate Location of Former Farm Ponds
- Property Boundary

Date: April 22, 2019
Data Sources: Wah Chang, City of Albany GIS

FIGURE 2B

Farm Ponds Area Groundwater Contours

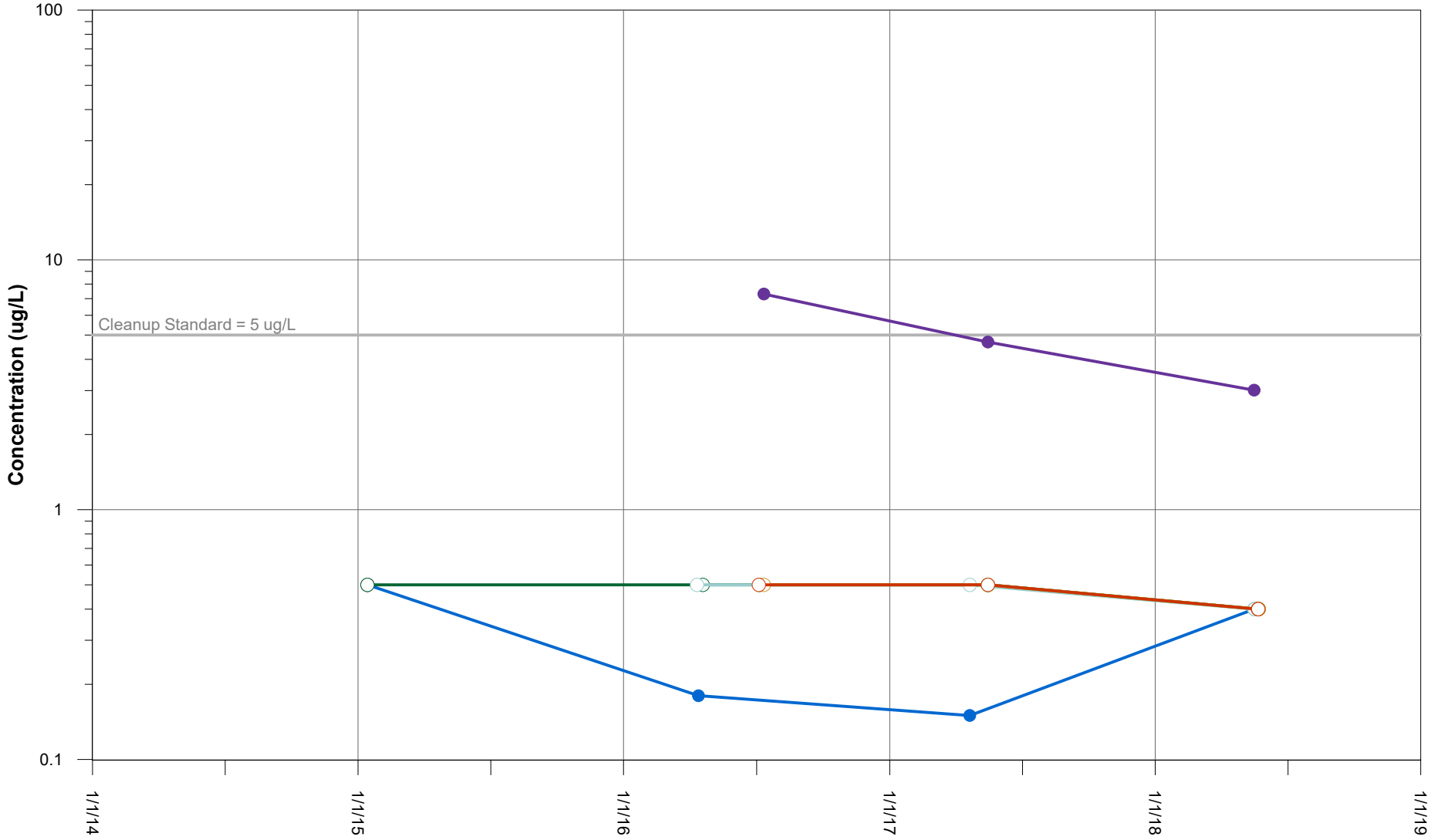
ATI Millersburg Operations, Oregon

N

0 45 90 135
Feet

GSI Water Solutions, Inc.

Document Path: Y:\0168_Wah_Chang\Source_Figures\028_2019\Annual_Report\Farm_Ponds_Area\Figure2B_GW_Contours.mxd



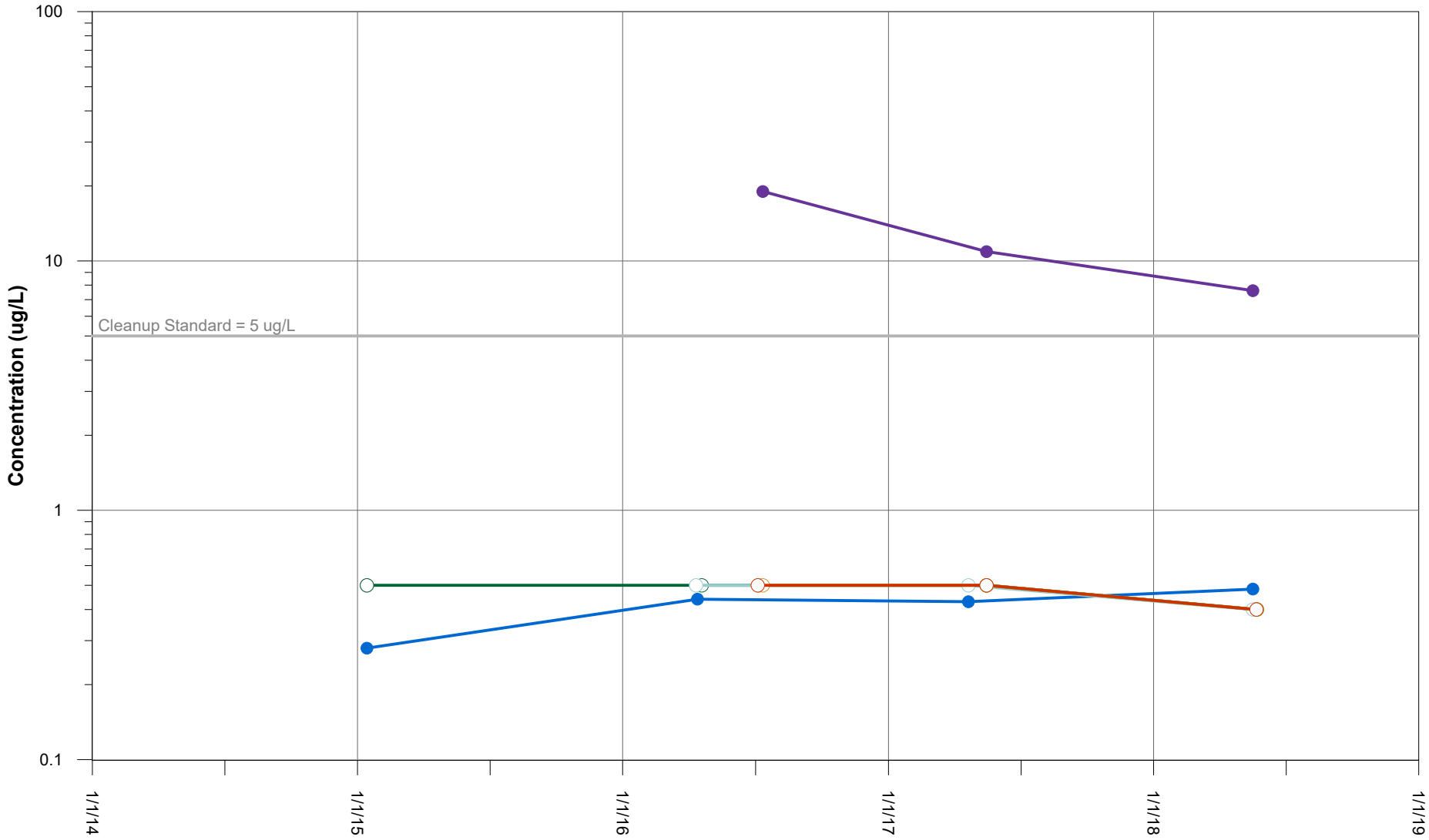
Legend:

PW-40S, PW-105S, PW-108A, Detected Value
PW-65S, PW-106S, SD, Non-Detect Value
PW-104S, PW-107S

FIGURE 3
Farm Ponds Area
Tetrachloroethene Concentration Trends, 2014-2018
ATI Millersburg Operations, Oregon

Notes:
ug/L = microgram per liter
5-year rolling plot displays all wells with any cleanup standard exceedances in the provided timeframe. For historical data, see table in Attachment B.
Fall 2014 sampling event was conducted in January and February 2015.
Monitoring well SD was removed from the monitoring program in 2015.
Monitoring wells PW-104S through PW-108A were first sampled in 2016. PW-104S is the replacement for well SS and PW-108A is the replacement for well SD.

GSI Water Solutions, Inc.



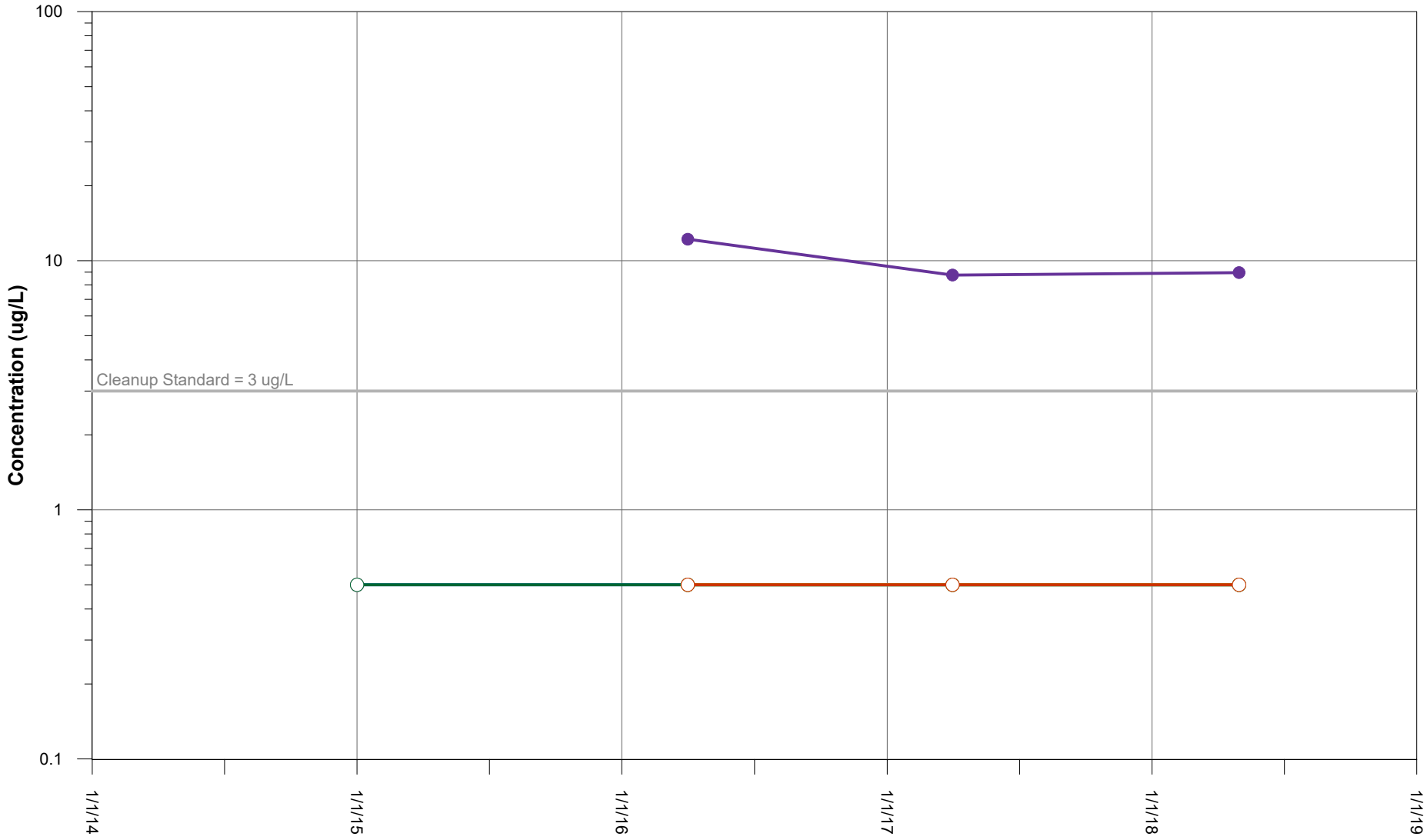
Legend:

PW-40S · PW-105S · PW-108A · Detected Value
PW-65S · PW-106S · SD · Non-Detect Value
PW-104S · PW-107S

FIGURE 4
Farm Ponds Area
Trichloroethene Concentration Trends, 2014-2018
ATI Millersburg Operations, Oregon

Notes:
ug/L = microgram per liter
5-year rolling plot displays all wells with any cleanup standard exceedances in the provided timeframe. For historical data, see table in Attachment B.
Fall 2014 sampling event was conducted in January and February 2015.
Monitoring well SD was removed from the monitoring program in 2015.
Monitoring wells PW-104S through PW-108A were first sampled in 2016. PW-104S is the replacement for well SS and PW-108A is the replacement for well SD.

GSI Water Solutions, Inc.



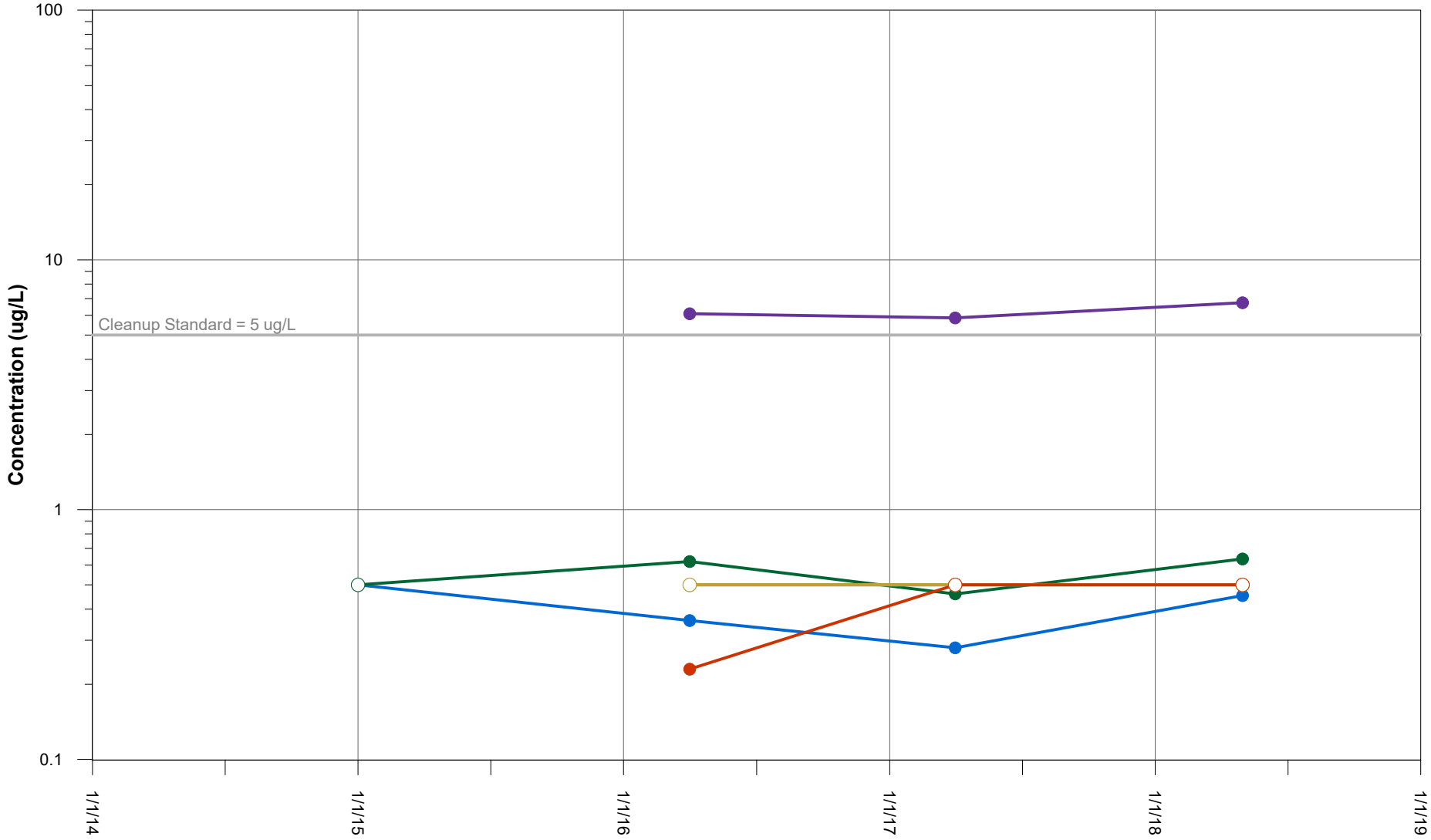
Legend:

PW-40S · PW-105S · PW-108A · Detected Value
PW-65S · PW-106S · SD · Non-Detect Value
PW-104S · PW-107S

FIGURE 5
Farm Ponds Area
1,1,2-Trichloroethane Concentration Trends, 2014-2018
ATI Millersburg Operations, Oregon

Notes:
ug/L = microgram per liter
5-year rolling plot displays all wells with any cleanup standard exceedances in the provided timeframe. For historical data, see table in Attachment B.
Fall 2014 sampling event was conducted in January and February 2015.
Monitoring well SD was removed from the monitoring program in 2015.
Monitoring wells PW-104S through PW-108A were first sampled in 2016. PW-104S is the replacement for well SS and PW-108A is the replacement for well SD.

GSI Water Solutions, Inc.



Legend:

PW-40S · PW-105S · PW-108A · Detected Value
PW-65S · PW-106S · SD · Non-Detect Value
PW-104S · PW-107S

FIGURE 6
Farm Ponds Area
1,2-Dichloroethane Concentration Trends, 2014-2018
ATI Millersburg Operations, Oregon

Notes:
ug/L = microgram per liter
5-year rolling plot displays all wells with any cleanup standard exceedances in the provided timeframe. For historical data, see table in Attachment B.
Fall 2014 sampling event was conducted in January and February 2015.
Monitoring well SD was removed from the monitoring program in 2015.
Monitoring wells PW-104S through PW-108A was first sampled in 2016. PW-104S is the replacement for well SS and PW-108A is the replacement for well SD.

GSI Water Solutions, Inc.

Attachment A
Well Construction Details

Table A-1. Farm Ponds Area Well Contruction Details

ATI Millersburg Operations, Oregon

Station	Well Construction Data					Screen Depth		Screen Elevations		Regulatory Identification	Location Data	
Well	Borehole Diameter (inches)	Well Diameter (inches)	TOC Elevations (ft msl)	Stick Up (ft ags)	Bottom of Well Casing (ft bgs)	Top (ft bgs)	Bottom (ft bgs)	Top (ft msl)	Bottom (ft msl)	Date Constructed	Easting	Northing
HW	6	3	238.50	0.00	35	15	25	223.50	213.50	8/31/1979	7533949.00	377832.00
ND	6	3	232.85	2.65	57	53	57	177.20	173.20	1/21/1981	7533615.00	378572.00
ND-1	8	4	216.86	2.36	41.5	31	41	183.50	173.50	10/5/1983	7533127.00	378892.00
ND-2	8	4	217.34	2.84	29	21	29	193.50	185.50	10/5/1983	7533127.00	378908.00
NS	--	3	221.15	2.65	12	8.5	12	210.00	206.50	8/31/1979	7533520.00	378619.00
PW-35A	8	4	234.99	1.89	45	33	43	200.10	190.10	7/28/1988	7534545.00	377533.00
PW-36A	8	4	235.99	2.79	27	15	25	218.20	208.20	8/9/1988	7535114.00	377834.00
PW-37A	8	4	227.32	2.52	38	24.6	34.6	200.20	190.20	8/11/1988	7535131.00	378206.00
PW-38A	8	4	223.04	1.84	33.9	26.9	31.9	194.30	189.30	7/12/1988	7534300.00	378544.00
PW-39A	8	4	238.70	2.90	45.8	33.8	43.8	202.00	192.00	7/1/1988	7534078.00	378015.00
PW-40A	8	4	217.17	1.67	42.4	30	40	185.50	175.50	3/21/1989	7532997.00	377816.00
PW-40S	8	4	217.51	2.01	18	11	16	204.50	199.50	3/22/1989	7533007.00	377815.00
PW-43A	8	4	214.12	1.92	40.1	28.1	38.1	184.10	174.10	8/22/1990	7532599.00	377934.00
PW-43S	8	4	214.35	2.35	17.6	10.6	15.6	201.40	196.40	8/23/1990	7532600.00	377916.00
PW-44A	8	4	214.40	2.60	34.9	22.4	32.4	189.40	179.40	8/29/1990	7532629.00	377567.00
PW-44S	8	4	214.44	2.54	16.7	9.2	14.2	202.70	197.70	8/30/1990	7532625.00	377548.00
PW-64A	6	2	212.93	1.15	38.5	28	38	183.78	173.78	9/27/1999	7533224.00	377576.00
PW-64S	10	2	212.96	2.90	17	7	17	203.06	193.06	9/23/1999	7533206.00	377582.00
PW-65A	6	2	212.52	2.30	38	27.5	37.5	182.72	172.72	9/28/1999	7532990.00	377595.00
PW-65S	10	2	213.06	2.50	16	5	15	205.56	195.56	9/23/1999	7532980.00	377589.00
PW-66A	6	2	211.46	2.00	37	27	37	182.46	172.46	9/24/1999	7532585.00	378133.00
PW-66S	10	2	211.36	2.00	16	5	15	204.36	194.36	9/24/1999	7532585.00	378148.00
PW-67A	6	2	215.18	2.20	37.5	27	37	185.98	175.98	9/23/1999	7532559.00	378489.00
PW-67S	10	2	212.71	2.50	16	5	15	205.21	195.21	9/23/1999	7532563.00	378491.00
PW-104S	3.25	2	222.76	2.61	20.24	15	20	205.15	200.15	8/27/2015	7533516.11	377800.84
PW-105S	3.25	2	218.52	2.50	20.37	15	20	201.02	196.02	8/27/2015	7533450.80	377686.14
PW-106S	3.25	2	219.55	2.64	19.66	15	20	201.91	196.91	8/27/2015	7533508.54	377647.30
PW-107S	3.25	2	220.65	2.42	19.98	15	20	203.23	198.23	8/26/2015	7533566.64	377665.92
PW-108A	3.25	2	223.58	2.73	42.2	37	42	183.85	178.85	8/25/2015	7533557.98	377798.48

Table A-1. Farm Ponds Area Well Contruction Details

ATI Millersburg Operations, Oregon

Station	Well Construction Data					Screen Depth		Screen Elevations		Regulatory Identification	Location Data	
Well	**Borehole Diameter** (inches)	**Well Diameter** (inches)	**TOC Elevations** (ft msl)	**Stick Up** (ft ags)	**Bottom of Well Casing** (ft bgs)	**Top** (ft bgs)	**Bottom** (ft bgs)	**Top** (ft msl)	**Bottom** (ft msl)	**Date Constructed**	**Easting**	**Northing**
WD1	8	4	220.45	0.55	47	34	44	185.90	175.90	10/5/1983	7532967.00	378273.00
WD2	8	4	220.60	0.90	34	24	34	195.70	185.70	10/5/1983	7532966.00	378289.00
WS	--	3	220.37	0.97	12	8	12	211.40	207.40	8/31/1979	7532965.00	378237.00

Notes:

-- = not available

ft ags = feet above ground surface

ft bgs = feet below ground surface

ft msl = feet above mean sea level

TOC = top of casing

Attachment B
Groundwater Quality Data

Table B-1. Farm Ponds Area Groundwater Quality Data in 2000-2018

ATI Millersburg Operations, Oregon

CVOC	Cleanup Standard	September 2000	September 2001	September 2002	September 2003	September 2004	September 2005	September 2006	June 2007	September 2008	October 2009	September 2010	September 2011	August 2012	August 2013	January 2015[5]	April 2016	April 2017	May 2018
Monitoring Well PW-40S																			
PCE	5	2.5	1.8	0.54	1 U	0.5 U	0.77	0.13 J	1.1	0.5 U	0.57	0.55	0.43 J	0.5 U	0.5 U	0.5 U	0.18 J	0.15 J	0.4 U
TCE	5	**15.9**	**8.5**	**5.63**	4.11	1.82	1.5	0.83	1.3	0.7	0.49 J	0.5 U	0.5 U	0.5 U	0.5 U	0.28 J	0.44 J	0.43 J	0.483
Cis 1,2-DCE	70	45	37.6	41.76	40.89	31.9	21.8	23.7	10.5	23	0.74	0.61	0.52	0.5 U	0.5 U	1.7	8.03	6.75	9.06
Vinyl Chloride	2	**2.4**	**4.2**	**4.55**	**3.19**	**2.97**	1.7	**2.7**	0.85	**2.4**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 J	0.5 U	0.472
1,1,1-TCA	200	1 U	1 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U
1,1,2,2-PCA	0.175	1 U	1 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.05 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TCA	3	1 U	1 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.32 J	0.5 U	0.12 J	0.13 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DCA	810	45.8	35	31.03	29.35	28.09	30.5	29.8	31.8	35	14.3	12.7	9.8	5.3	2.6	3.7	6.45	4.66	5.87
1,1-DCE	7	2.5	1.9	1.93	1.46	0.87	0.67	0.52	0.38 J	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U
1,2-DCA	5	6.6	3.6	4.73	4.28	2.57	1.8	1.8	0.86	1.7	0.12 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.36 J	0.28 J	0.453
Monitoring Well PW-65S [1]																			
PCE	5								0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U
TCE	5								0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U
Cis 1,2-DCE	70								0.5 U	0.2 J	0.11 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U
Vinyl Chloride	2								0.5 U	0.1 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U
1,1,1-TCA	200								0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U
1,1,2,2-PCA	0.175								0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TCA	3								0.18 J	0.2 J	0.12 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DCA	810								3.4	6.2	4.17	3.82	2.68	2.12	1.89	0.5 U	3.27	2.17	2.52
1,1-DCE	7								0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U
1,2-DCA	5								0.51	1.2	0.64	0.59	0.51	0.5 U	0.5 U	0.5 U	0.62	0.46 J	0.635
Monitoring Well SS [2]																			
PCE	5	**22.5**	**16**	**8.7**	**12.72**	**14.22**	**14.7**	**26.3**	**40.4**	**49**	2.52	2.13	1.45	0.99					
TCE	5	**6.2**	3.9	2.91	3.66	3.35	3.8	**7.1**	**11.3**	**13**	0.26 J	0.25 J	0.5 U	0.5 U					
Cis 1,2-DCE	70	2.9	1.7	1.22	1.27	0.88	1.1	1.5	3.9	3.5	0.5 U	0.5 U	0.5 U	0.5 U					
Vinyl Chloride	2	1 U	1 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U					
1,1,1-TCA	200	0.6 J	1 U	0.5 U	1 U	0.5 U	0.5 U	0.7	1.2	1.2	0.16 J	0.5 U	0.5 U	0.5 U					
1,1,2,2-PCA	0.175	**1.3**	**0.8 J**	**0.57**	1 U	**0.59**	**0.58**	**0.84**	**1.3**	**1.3**	0.1 J	0.5 U	0.5 U	0.5 U					
1,1,2-TCA	3	**5.8**	**3.7**	**3.4**	**3.61**	**3.91**	**4.6**	**7.5**	**13.9**	**14**	0.7	0.61	0.5 U	0.5 U					
1,1-DCA	810	2.3	1.7	1.51	1.83	1.79	2.3	4.7	8.4	8.2	0.33 J	0.29 J	0.5 U	0.5 U					
1,1-DCE	7	1 U	1 U	0.5 U	1 U	0.5 U	0.5 U	0.69	1.5	1.4	0.5 U	0.5 U	0.5 U	0.5 U					
1,2-DCA	5	1 U	1 U	0.5 U	1 U	0.5 U	0.5 U	0.56	1.4	1.1	0.5 U	0.5 U	0.5 U	0.5 U					
Monitoring Well SD [3]																			
PCE	5													0.5 U	0.5 U	0.5 U			
TCE	5													0.5 U	0.5 U	0.5 U			
Cis 1,2-DCE	70													0.5 U	0.5 U	0.5 U			
Vinyl Chloride	2													0.5 U	0.5 U	0.5 U			
1,1,1-TCA	200													0.5 U	0.5 U	0.5 U			
1,1,2,2-PCA	0.175													0.5 U	0.5 U	0.5 U			
1,1,2-TCA	3													0.5 U	0.5 U	0.5 U			
1,1-DCA	810													0.5 U	0.5 U	0.5 U			
1,1-DCE	7													0.5 U	0.5 U	0.5 U			
1,2-DCA	5													0.5 U	0.5 U	0.5 U			

Table B-1. Farm Ponds Area Groundwater Quality Data in 2000-2018

ATI Millersburg Operations, Oregon

CVOC	Cleanup Standard	September 2000	September 2001	September 2002	September 2003	September 2004	September 2005	September 2006	June 2007	September 2008	October 2009	September 2010	September 2011	August 2012	August 2013	January 2015[5]	April 2016	April 2017	May 2018
Monitoring Well PW-104S [4]																			
PCE	5																**7.3**	4.69	3.01
TCE	5																**19**	**10.9**	**7.60**
Cis 1,2-DCE	70																41.6	35.5	37.9
Vinyl Chloride	2																0.55	0.5 U	0.4 U
1,1,1-TCA	200																0.5 U	0.5 U	0.4 U
1,1,2,2-PCA	0.175																**0.37 J**	**0.28 J**	0.5 U
1,1,2-TCA	3																**12.2**	**8.76**	**8.96**
1,1-DCA	810																16.2	11.7	11.9
1,1-DCE	7																1.52	0.64	0.915
1,2-DCA	5																**6.09**	**5.86**	**6.74**
Monitoring Well PW-105S [4]																			
PCE	5																0.5 U	0.5 U	0.4 U
TCE	5																0.5 U	0.5 U	0.4 U
Cis 1,2-DCE	70																0.35 J	0.15 J	0.4 U
Vinyl Chloride	2																0.5 U	0.5 U	0.4 U
1,1,1-TCA	200																0.5 U	0.5 U	0.4 U
1,1,2,2-PCA	0.175																0.5 U	0.5 U	0.5 U
1,1,2-TCA	3																0.5 U	0.5 U	0.5 U
1,1-DCA	810																0.28 J	0.5 U	0.4 U
1,1-DCE	7																0.5 U	0.5 U	0.4 U
1,2-DCA	5																0.23 J	0.5 U	0.4 U
Monitoring Well PW-106S [4]																			
PCE	5																0.5 U	0.5 U	0.4 U
TCE	5																0.5 U	0.5 U	0.4 U
Cis 1,2-DCE	70																0.5 U	0.5 U	0.4 U
Vinyl Chloride	2																0.5 U	0.5 U	0.4 U
1,1,1-TCA	200																0.5 U	0.5 U	0.4 U
1,1,2,2-PCA	0.175																0.5 U	0.5 U	0.5 U
1,1,2-TCA	3																0.5 U	0.5 U	0.5 U
1,1-DCA	810																0.5 U	0.5 U	0.4 U
1,1-DCE	7																0.5 U	0.5 U	0.4 U
1,2-DCA	5																0.5 U	0.5 U	0.4 U
Monitoring Well PW-107S [4]																			
PCE	5																0.5 U	0.5 U	0.4 U
TCE	5																0.5 U	0.5 U	0.4 U
Cis 1,2-DCE	70																0.5 U	0.5 U	0.4 U
Vinyl Chloride	2																0.5 U	0.5 U	0.4 U
1,1,1-TCA	200																0.5 U	0.5 U	0.4 U
1,1,2,2-PCA	0.175																0.5 U	0.5 U	0.5 U
1,1,2-TCA	3																0.5 U	0.5 U	0.5 U
1,1-DCA	810																0.5 U	0.5 U	0.4 U
1,1-DCE	7																0.5 U	0.5 U	0.4 U
1,2-DCA	5																0.5 U	0.5 U	0.4 U

Table B-1. Farm Ponds Area Groundwater Quality Data in 2000-2018

ATI Millersburg Operations, Oregon

CVOC	Cleanup Standard	September 2000	September 2001	September 2002	September 2003	September 2004	September 2005	September 2006	June 2007	September 2008	October 2009	September 2010	September 2011	August 2012	August 2013	January 2015[5]	April 2016	April 2017	May 2018
Monitoring Well PW-108A [4]																			
PCE	5																0.5 U	0.5 U	0.4 U
TCE	5																0.5 U	0.5 U	0.4 U
Cis 1,2-DCE	70																0.5 U	0.5 U	0.4 U
Vinyl Chloride	2																0.5 U	0.5 U	0.4 U
1,1,1-TCA	200																0.5 U	0.5 U	0.4 U
1,1,2,2-PCA	0.175																0.5 U	0.5 U	0.5 U
1,1,2-TCA	3																0.5 U	0.5 U	0.5 U
1,1-DCA	810																0.5 U	0.5 U	0.4 U
1,1-DCE	7																0.5 U	0.5 U	0.4 U
1,2-DCA	5																0.5 U	0.5 U	0.4 U

Notes:

[1] Monitoring well PW-65S was first sampled in 2007.

[2] Monitoring well SS was decommissioned on September 30, 2012.

[3] Monitoring well SD was first sampled in 2011 and decomissioned in August 2015.

[4] Monitoring wells PW-104S through PW-108A were first sampled in 2016. PW-104S is a replacement for well SS and PW-108A is a replacement for well SD.

[5] Monitoring event for 2014 was conducted in January 2015.

µg/L = microgram per liter

CVOC = chlorinated volatile organic compound

DCA = dichloroethane

DCE = dichloroethene

J = estimated value below method reporting limit

PCA = tetrachloroethane

PCE = tetrachloroethene

TCA = trichloroethane

TCE = trichloroethene

U = analyte not detected above method reporting limit

Bold indicates that the concentration meets or exceeds the cleanup standard. Refer to Quality Assurance Project Plan for Sitewide Remedial Action Table B-4 for more details (GSI, 2015b).